

Missouri's

# TOADS and FROGS



*Serving nature and you*

by Jeffrey T. Briggler and Tom R. Johnson, Herpetologists

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*Cover photo: Eastern gray treefrog by Tom R. Johnson*

**M**issouri toads and frogs are colorful, harmless, vocal and valuable. Our forests, prairies, rivers, swamps and marshes are home to a multitude of toads and frogs, but few people know how many varieties we have, how to tell them apart, or much about their natural history. Studying these animals and sharing their stories with fellow Missourians is one of the most pleasurable and rewarding aspects of our work.

Toads and frogs are amphibians—a class of vertebrate animals that also includes salamanders and the tropical caecilians, which are long, slender, wormlike and legless. Missouri has 26 species and subspecies (or geographic races) of toads and frogs. Toads and frogs differ from salamanders by having relatively short bodies and lacking tails at adulthood. Being an amphibian means that they live two lives: an aquatic larval or tadpole stage and a semi-aquatic or terrestrial adult stage. Of the 6,145 species of amphibians currently recognized in the world, there are approximately 4,145 species of toads and frogs. The largest species is the Goliath frog, *Conraua*

Like most amphibians, frogs and toads have an aquatic tadpole stage and a semi-aquatic or terrestrial adult stage.



*Calling male American toad*

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*goliath*, of the west coast of Africa, which may have a head-body length of nearly 14 inches and may weigh as much as 7 pounds. One of the world's smallest frogs is *Eleutherodactylus iberia*, which has no common name and lives in the tropical forests of Cuba. It is less than a half-inch long as an adult. This frog is so tiny that females of the species are able to produce only one egg during the breeding season.

One often-asked question is: "What are the differences between toads and frogs?" Even though they are more similar than different, there are some basic physical distinctions. Frogs have smooth, wet skin, while toads' skin is dry and warty looking. See the next page for other distinctions.

All Missouri  
toads and  
frogs must  
return to a  
body of water  
to reproduce.

With practice, people can learn to identify a variety of toads and frogs by the sounds they make. A male toad or frog produces his call by a rapid back-and-forth movement of air over his vocal cords. When calling, a toad or frog will close its mouth and nasal openings and force air from its lungs over the vocal cords into the mouth cavity, then back over the vocal cord and into the lungs. Producing a sound in this "closed system" enables some toads and frogs to vocalize underwater. These animals use an

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*A pair of mating southern leopard frogs*

# Differences between frogs and toads

## Frogs

- smooth, wet skin
- tiny teeth on both upper and lower jaws
- jump or leap
- lay eggs singly, in small clumps, in large masses, or as a film of eggs on the water surface



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*Freshly laid egg mass of the wood frog*

## Toads

- dry, warty skin
- no teeth
- shorter hind legs than most frogs
- hop or crawl
- lay eggs in long, parallel strings



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*Freshly laid egg string of the American toad*

enlarged throat or expandable vocal sac to resonate their calls.

All Missouri toads and frogs must return to a body of water to reproduce. Most species breed during the late winter, spring or early summer, but southern leopard frogs, *Rana sphenoccephala*, are also known to breed during rainy periods in the autumn. The majority of these amphibians select fishless bodies of water for breeding. Flooded fields, ditches, woodland and prairie ponds, and temporary pools are favorite breeding places. A few adventurous males locate an appropriate breeding pond when the temperature and humidity are suitable, and begin to call. Each species of toad or frog has a distinct breeding call which entices females to join them and select a mate.





*Some tadpoles are beautifully colored such as this eastern gray treefrog.*

Tiny, newly hatched tadpoles rest for a few days by clinging to aquatic plants.

Soon, other males congregate and add their voices to the chorus. Females, heavy with eggs, enter the pond and are grasped by a male in an embrace called “amplexus” and begin the process of egg-laying. During egg-laying, the male’s vent opening is positioned just above the female’s vent, and as her eggs are released, the male fertilizes them with his milt. He will retain his firm grip on her until all the eggs have been laid.

Most eggs hatch within 10 to 14 days of being laid, but they may hatch much sooner if the water temperature is above 70 degrees F. The tiny, newly hatched tadpoles rest for a few days by clinging to aquatic plants, receiving nourishment from the last of the yolk sac stored in their bellies. Most Missouri tadpoles eat aquatic plants—especially algae—as they develop in the wetland. Tadpoles have gills, somewhat like fish, which are covered and protected by a flap of skin. As development progresses, the hind legs form and enlarge. The tail begins to shrink at this stage. As the front legs appear, the tail continues to become smaller. Soon the gills are not used, and the late-stage tadpole begins to breathe air at the surface, using brand-new lungs. The final stage of development from a tadpole to a young frog,

known as a froglet, is the combination of the disappearance of the tail and the change from a life underwater to a life on land or along the edge of a pond or swamp. Soon after transforming from tadpoles to froglets or toadlets, these young amphibians begin eating insects, small spiders and worms. They grow quickly.

Toads and frogs defend themselves in several ways. Most of their predators are fish, turtles, snakes, birds and carnivorous mammals—shrews, mink, skunks and raccoons. Missouri's larger species of frogs also will eat other frogs. Toads cannot jump as fast as frogs. To escape a predator, toads defend themselves by producing toxic or unpleasant-tasting skin secretions that are released when the animal is seized. Due to their toxic skin, toads are not a popular food among most predators. Even their eggs and tadpoles are said to be toxic. Frogs also have skin glands which cause them to have a bad taste. But the secretions are not generally as strong as those of toads, so frogs are eaten by a much wider variety of predators. People normally are not affected by the skin secretions of toads and frogs, though human eyes are sensitive to these substances. The pain and burning that result when even a slight

Tadpoles have gills, somewhat like fish, which are covered and protected by a flap of skin.



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*Pickerel frog tadpole getting close to metamorphosis*



*Eastern garter snake eating a southern leopard frog*

Most predators  
of toads and  
frogs are fish,  
turtles, snakes,  
birds and  
carnivorous  
mammals.

amount of skin secretion gets in one of your eyes is something you will never forget. It is important to wash your hands after handling a toad or frog. The age-old myth that toads can cause warts on people is false.

The toads and frogs native to Missouri are a valuable part of our outdoor heritage. Most people probably do not give them much thought, but we need these amphibians to control destructive insects and to add their voices to the sounds of spring and summer nights. Just hearing or seeing them adds to our enjoyment of the Missouri outdoors. Their role in nature can be illustrated by the huge number of insects they eat and by the number of animals that eat toads, frogs or their tadpoles. Since their bodies readily take in contaminants, they are good indicators of environment health. Amphibian skin secretions also are used in medical research to control and cure human diseases. And, a discussion of the value of frogs should include the fact that thousands of bullfrogs are harvested in our state each year for human consumption—one of Missouri's truly gourmet outdoor foods.



## Eastern Spadefoot

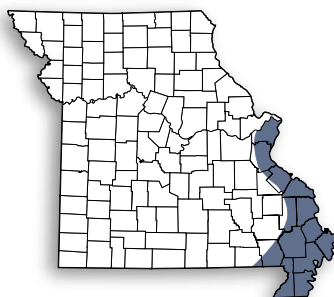
*Scaphiopus holbrookii*

This is a stout, toadlike amphibian with large, protruding eyes, vertically elliptical pupils, short legs and large feet. The inner surface of each hind foot has a sickle-shaped spur or spade. Coloration is light brown to yellow-brown. The head, back and upper part of the legs are mottled with dark brown. There are usually two or three light yellow-brown stripes along the back. The belly is pale gray to white. The eastern spadefoot may be from  $1\frac{3}{4}$  to  $2\frac{1}{4}$  inches in head-body length. This species prefers open areas with sandy or loose soil. It breeds in temporarily flooded fields or ditches

during warm, rainy weather in spring or summer. Due to the draining of wetlands and loss of native sand prairies, this species is rare in Missouri. The call is a quick series of coarse *errrah, errrah, errrah* sounds. This secretive, burrowing species eats a variety of insects.

### Missouri Distribution:

Eastern counties along the Mississippi River and southeastern sections of the state



### Rare Species





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## Plains Spadefoot

*Spea bombifrons*

These small toadlike amphibians have large, protruding eyes. The pupils of their eyes are vertical and elliptical. The general coloration ranges from gray to brown, and there may be some green on the sides. The small, irregular blotches on the back and legs are dark brown and may encircle the majority of their tiny warts. The hind legs are short, and the underside of each hind foot has a distinct, wedge-shaped spade, hence its name. This toad is from 1½ to 2 inches in head-body length. The species is at home on the Great Plains, where it inhabits prairies and open-river flood plains. It hides in burrows in sandy soil and becomes active at night, especially after heavy summer rains. The plains spadefoot eats a variety of insects. Breeding takes place during April and May. Their voice is a long, rasping, nasal *garvank*.

### Missouri Distribution:

Missouri River floodplain from St. Louis to the northwestern corner of the state



## Eastern American Toad

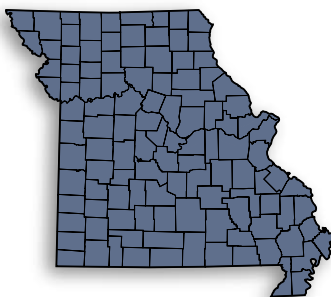
*Bufo americanus americanus*

This is Missouri's most common toad. The American toad is medium-sized and has a large, kidney-shaped gland called the parotoid gland behind each eye. The pupil of each eye is horizontal. Coloration may be gray, light brown or reddish-brown. The dark spots on the back may encircle from one to three warts. The belly is cream-colored and mottled with dark gray. This species averages from 2 to 3 inches in head-body length. Females generally are larger than males. American toads select woodland ponds or water-filled ditches for breeding in late March, April and early May. The call is a sustained, high-pitched musical trill. This species eats earthworms and a wide variety of insects.

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### Missouri Distribution:

Throughout the northern half of the state, but intergrades with, and is replaced by the dwarf American toad, *Bufo americanus charlesmithi*, (a sub-species or geographic race) in the southern half of the state



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## Rare Species



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### Great Plains Toad

*Bufo cognatus*

This uncommon toad in Missouri is found throughout the Great Plains, hence its name. The skin is covered with many small warts. Large, dark brown or green, paired blotches encircled by white or tan lines are found on the body. The color of the belly is cream. Unlike other toads in Missouri, Great Plains toads have a raised hump (known as a “boss”) between the eyes. This medium-size toad’s head-body length ranges from 2 to 3 inches. This species is found along the Missouri River floodplain where it hides in burrows by day. At night it emerges to feed upon ants, beetles and other insects. The Great Plains toad lays several thousand eggs in flooded fields, ditches and temporary pools after heavy spring and summer rains. The call is a loud, chugging sound—*chee-ga, chee-ga, chee-ga*—that lasts 20 to 50 seconds.

#### Missouri Distribution:

Restricted to the floodplain of the Missouri River from central Missouri to the northeastern corner of the state





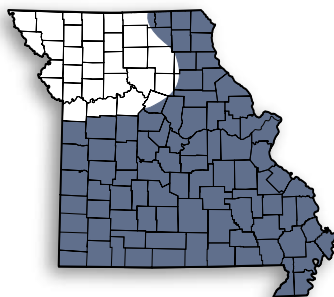
## Fowler's Toad

*Bufo fowleri*

This common toad is found along many Ozark streams and lowlands of southern Missouri. This species may have a ground color of gray, greenish-gray, tan or brown. Fowler's toads typically have paired dark markings with three or more warts. There is often a thin, white stripe down the back. The belly is cream-colored, and there may be a dark gray spot on the chest. Fowler's toads range in head-body length from 2½ to 4 inches. This toad is often found on river sand or gravel bars and in river floodplains where the soil is sandy. As with other toads, this amphibian remains hidden in burrows by day, becoming active at night to hunt for insects. Fowler's toads breed later in the season than American toads—from late April to early June. The call is a short, nasal *w-a-a-a-b*, lasting from 1 to 2½ seconds.

### Missouri Distribution:

Found over most of the eastern and southern parts of Missouri



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## Woodhouse's Toad

*Bufo woodhousii*

This toad is very similar in appearance to the Fowler's toad with color variations from gray, greenish-gray, and tannish-gray to brown. Unlike Fowler's toad, this species typically has irregular placed dark markings with the number of warts varying from one to six. A white stripe is often present down the back, and the belly is white and typically does not have a dark spot on the chest. Woodhouse's toads range in head-body length  $2\frac{1}{2}$  to 4 inches. This species is mainly found in sandy river bottoms. At night they feed upon a variety of insects. Like other species of toads, this species lays several thousand eggs in flooded fields, ditches, ponds, pools and streams during late April to early June. Their call is similar to the Fowler's toad but with a slightly lower pitch. This species is presumed to hybridize with Fowler's toads in the zone of overlap.

### Missouri Distribution:

Found mainly along the Missouri River floodplain and along streams in the western part of the state



## Blanchard's Cricket Frog

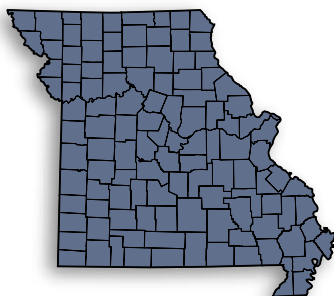
*Acris crepitans blanchardi*

This small frog is a member of the treefrog family (Hylidae) but is a non-climber and lacks the adhesive toe pads associated with treefrogs. Coloration is quite variable—gray, tan, greenish-tan or brown. The back may have a green, yellow, orange or brown stripe. There is always a dark triangle between the eyes. This warty frog averages from  $\frac{5}{8}$  to  $1\frac{1}{2}$  inches in head-body length. Cricket frogs are commonly seen along the edges of ponds and rivers, especially on mud flats and gravel bars. This species avoids predators by a series of quick, erratic hops. Blanchard's cricket frogs breed from late April to early July, at which time their metallic *gick, gick, gick* may be heard.

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### Missouri Distribution:

Statewide



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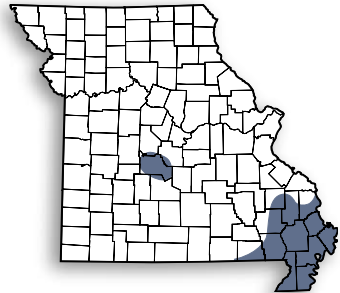
## Green Treefrog

*Hyla cinerea*

This bright green frog's coloration is normally light green, but during cool weather it may be dark green. There is always a white or pale yellow line running from the upper lip down along the sides. Some yellow spots may also be present on the back. The belly is white or yellowish. Distinct round, adhesive pads are found on all digits. Green treefrogs average from  $1\frac{1}{4}$  to  $2\frac{1}{4}$  inches in body length. This attractive frog lives in the last remaining cypress swamps, sloughs and oxbow lakes of southeastern Missouri. They hide in green leaves during the day and become active at night when they search for insect prey. This treefrog breeds mainly during the summer, and its call is a noticeable part of the nighttime sounds of our cypress swamps. The call is a series of measured, nasal *quank, quank, quank*, which is normally not heard until after sundown.

### Missouri Distribution:

Natural range includes Mississippi lowlands in southeastern Missouri, along with an introduced population in Camden County.





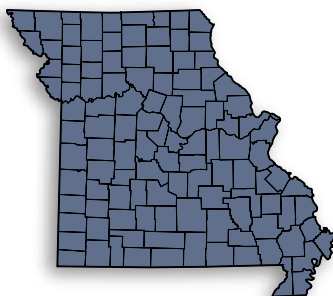
## Gray Treefrog

*Hyla chrysoscelis* and *Hyla versicolor*

Gray treefrogs are Missouri's most common species of treefrog. Their color may be gray, greenish-gray or brown. Bright green specimens are often seen. There is always a large, white marking below each eye. The inside of each hind leg is washed with yellow-orange. Large, adhesive toe pads are present on fingers and toes. Two species of gray treefrogs occur in Missouri: Cope's gray treefrog, *Hyla chrysoscelis*, and the eastern gray treefrog, *Hyla versicolor*. Gray treefrogs average from 1¼ to 2 inches in head-body length. These two species are nearly identical in appearance and are best separated by their calls. Cope's gray treefrog sounds like a buzzer, while the eastern gray treefrog has a birdlike, musical trill. These forest-dwelling species breed in late May and early June in fishless, woodland ponds.

### Missouri Distribution:

Both species are found statewide.



Green treefrogs and gray treefrogs can sometimes be difficult to correctly identify, especially since gray treefrogs can be green.

### GREEN TREEFROG

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- always green in color
- have a white or pale yellow stripe running from the upper lip and down along the side

### GRAY TREEFROG

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- typically gray in color, (left) but sometimes they are green (below)

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- have a light spot beneath the eye (see arrows) instead of the white or pale stripe as seen in green treefrogs

## Northern Spring Peeper

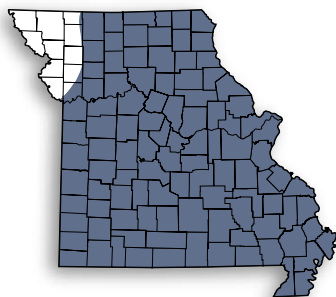
*Pseudacris crucifer crucifer*

A small, pinkish, gray or light tan treefrog with a dark X-mark on the back. This species has reduced adhesive toe pads, and spends most of the time on the forest floor or in low shrubbery. Spring peepers average from  $\frac{3}{4}$  to  $1\frac{1}{4}$  inch in head-body length. This woodland species lives near ponds, streams and swamps where there is thick undergrowth. Spring peepers are active from late winter to late fall, but breed mainly in late February to mid-May. Their voices are a true announcement of spring. Small, fishless, woodland ponds are required for breeding. Their high-pitched, peeping call can be heard on warm spring nights and also during the day in early summer and fall.

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### Missouri Distribution:

Nearly statewide, but not found in northwestern Missouri





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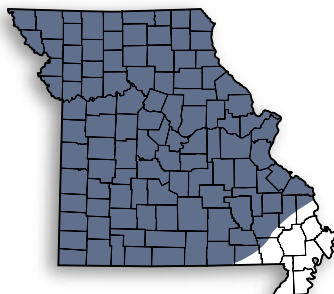
## Western Chorus Frog

*Pseudacris triseriata*

This small, secretive frog is found on grasslands, meadows and forest edges. Coloration may be gray or tan with three wide, dark stripes or a series of spots down the back and a wide, dark brown stripe on the sides. The belly is white. This species may be from  $\frac{3}{4}$  to  $1\frac{1}{2}$  inches in head-body length. Western chorus frogs are seldom seen and spend most of the summer underground in animal burrows or in clumps of grass. This small species breeds in early spring in temporarily flooded fields and ditches. Their call is a rasping, vibrating *prreeep*, which sounds similar to running a fingernail over the small teeth of a pocket comb.

### Missouri Distribution:

Nearly statewide; not found in southeastern Missouri



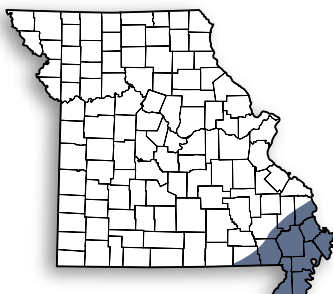


## Upland Chorus Frog

*Pseudacris feriarum feriarum*

This species is similar in appearance to the western chorus frog. Upland chorus frogs are gray or tan in color with three narrow or broken series of dashes down the back. The belly is white. Upland chorus frogs average from  $\frac{3}{4}$  to  $1\frac{3}{8}$  inches in head-body length. This species seeks shelter during the daytime under leaf litter, under logs, or bark on the forest floor. At night it forages for insects and spiders on the surface. This small frog of southeastern Missouri occurs in small patches of woods, swamps and river bottomland forest. They breed in late winter and early spring in temporary pools, flooded fields and ditches near forests. Their call is similar to the western chorus frog but has a longer and lower pitched call. This species is presumed to hybridize with western chorus frog in the zone of overlap.

### Missouri Distribution: Southeastern Missouri



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## Rare Species



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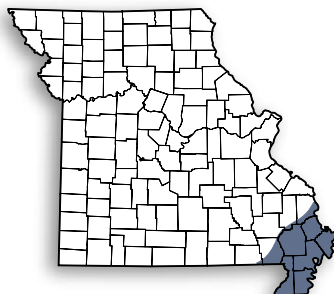
### Illinois Chorus Frog

*Pseudacris streckeri illinoensis*

This member of the treefrog family acts more like a toad. Most of its life is spent underground in sandy soil. General color may be tan or gray, with dark brown or gray markings. A V-shaped mark between the eyes and a dark spot below each eye are important characteristics. This small, burrowing chorus frog has large, muscular forelegs that are used for digging. Illinois chorus frogs average from 1 to 1½ inches in head-body length. Due to destruction of temporary pools and loss of native sand prairies where it lives, this species is rare in Missouri. It breeds in early spring, at which time its high-pitched, birdlike whistle can be heard.

#### Missouri Distribution:

Mississippi lowlands of  
southeastern Missouri



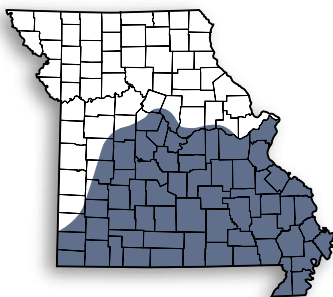
## Eastern Narrow-mouthed Toad

*Gastrophryne carolinensis*

The eastern narrow-mouthed toad is an unusual little amphibian that is seldom seen. It lives under flat rocks or other objects in dry woodlands or near some river floodplains. It is tan or gray in color with a dark, wedge-shaped marking on the back and a wide, dark stripe on each side. There is a fold of skin behind its narrow, pointed head. Its belly is heavily mottled. Eastern narrow-mouthed toads average from  $\frac{7}{8}$  to  $1\frac{1}{4}$  inch in head-body length. Its food consists mostly of ants. Breeding takes place in May and June, and its call is a bleating, nasal *baaaa*, which sounds like a lamb. This species may be found under rocks on glades or under logs along large-river floodplains.

### Missouri Distribution:

Throughout most of the southern half of the state



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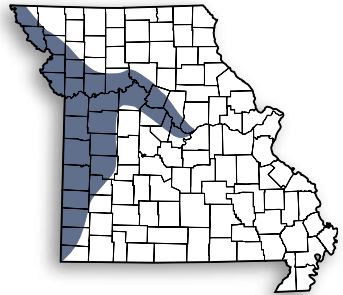
## Great Plains Narrow-mouthed Toad

*Gastrophryne olivacea*

The Great Plains narrow-mouthed toad is found throughout the Great Plains. This small amphibian is typically uniform in color from tan to gray or olive green. The belly is white. Like the eastern narrow-mouthed, this species has a plump body, small pointed head, and a fold of skin behind the eyes. Great Plains narrow-mouthed toads average from  $\frac{7}{8}$  to  $1\frac{1}{2}$  inches in head-body length. This species feeds primarily on ants and is found mainly in grasslands but also along rocky wooded hills and edges of marshes. During warm, heavy rains in summer, this species breeds in temporary pools, flooded fields and ditches. The call is a high-pitched short *peel* that sounds similar to the buzz of a bee.

### Missouri Distribution:

Western Missouri and along the Missouri River floodplain





## Northern Crawfish Frog

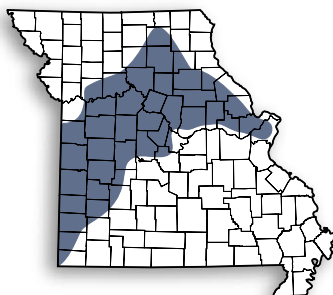
*Rana areolata circulososa*

This is Missouri's second largest species of frog. Northern crawfish frogs live in native prairies and grasslands near small creeks or marshes. Coloration is tan or light gray, with numerous brown or black spots. There is a faint ridge of raised skin along each side of the back. Northern crawfish frogs range from 3 to 4 inches in head-body length. This species is seldom seen because of its secretive nature. Crawfish frogs take shelter in crayfish burrows or other animal burrows. This prairie species eats a variety of insects, spiders and small crayfish.

Breeding takes place in early spring after heavy rains. This species is considered rare in Missouri due to destruction of native prairie and temporary pools. Fishless ponds are selected as breeding sites, and the deep, loud, snoring *guwaaa* can be heard from a considerable distance.

### Missouri Distribution:

Prairie areas in the northern, central and western sections of Missouri



### Rare Species





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## Plains Leopard Frog

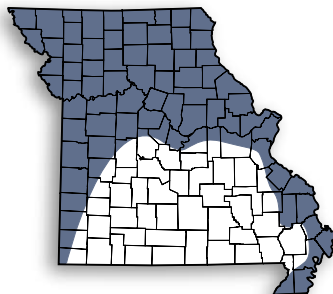
*Rana blairi*

This medium-sized spotted frog is found in pastures, prairies and marshes. The general color is tan, and the round spots on the back and sides may be brown, olive or dark green. The ridge of skin along each side of the back is broken, and the small posterior section is raised toward the back. A dark spot is often present on the snout, and the belly is white. Plains leopard frogs range from 2 to 3¾ inches in head-body length. They eat a variety of insects and spiders and are preyed upon by ribbon and garter snakes.

This species occurs mainly in former prairie regions and along river floodplains. Plains leopard frogs breed during late spring in small ponds, marshes or flooded fields. The voice is a rapid series of guttural *chuck-chuck-chuck* sounds.

### Missouri Distribution:

Throughout most of Missouri, except the Ozarks



## Bullfrog

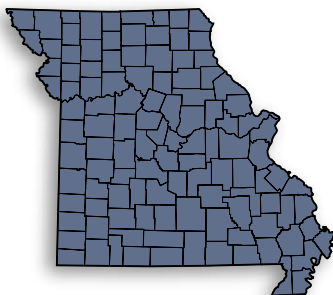
*Rana catesbeiana*

This is Missouri's largest frog and the state amphibian. General coloration ranges from green to olive to brown. The hind legs may be heavily marked with dark brown bars. Bullfrogs lack the two ridges of skin (known as dorsolateral folds) along the sides of the back found on the other *Rana* species. Bullfrogs average from 3½ to 6 inches in head-body length.

This large frog lives in a variety of permanent, aquatic habitats: swamps, marshes, sloughs, lakes, ponds, rivers and creeks. Bullfrogs eat insects, crayfish, frogs, small fish and other small animals. Male bullfrogs produce their familiar *jug-o'-rum* calls throughout the summer. This is a game animal in Missouri with a season and daily bag limit. Consult the *Wildlife Code of Missouri* for regulations.

### Missouri Distribution:

Statewide



### Game Species





## Game Species



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### Green Frog

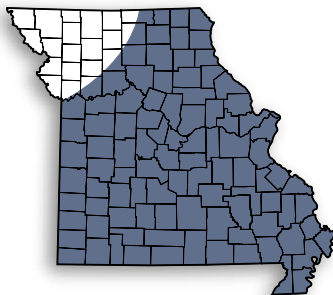
*Rana clamitans melanota*

This species looks similar to the bullfrog but is smaller and has a ridge of skin along the sides of the back that is not found on bullfrogs. General coloration may be greenish-brown or brown, and the legs may have distinct dark spots or bars.

The upper lip and parts of the head are often bright green. Adult males have a bright yellow throat. Green frogs average  $2\frac{1}{4}$  to  $3\frac{1}{2}$  inches in head-body length. In the Ozarks, green frogs live along rocky creeks and in sloughs and woodland ponds. In northern Missouri, the species occurs in farm ponds and marshes. Breeding takes place in late April through June. Their call is an explosive *bong* that sounds like a loose banjo string. This amphibian is considered a game animal. Consult the *Wildlife Code of Missouri* for regulations.

#### Missouri Distribution:

Nearly statewide; intergrades with and is replaced by the bronze frog (*Rana clamitans clamitans*) in southeastern Missouri





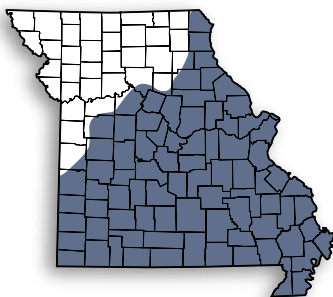
## Pickerel Frog

*Rana palustris*

This medium-sized tan frog has square or rectangular-shaped markings in two parallel rows down the back, and a wash of yellow along the underside of the hind legs. There is a wide ridge of skin along each side of the back. Pickerel frogs average from  $1\frac{3}{4}$  to 3 inches in head-body length. This frog may be found in wet caves, along well-shaded springs and creeks and in damp woods. They use wet caves as refuge in the summer to escape hot, dry weather conditions and in winter for protection against cold conditions. Breeding takes place during the spring in fishless, woodland ponds, sloughs and water-filled ditches. The breeding call is a descending, low-pitched snore lasting for several seconds.

### Missouri Distribution:

Southern half and the eastern edge of the state



## Rare Species



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### Northern Leopard Frog

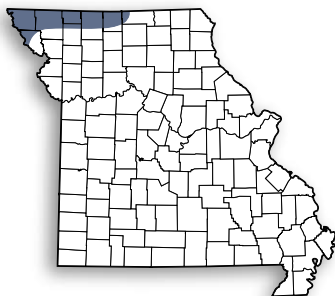
*Rana pipiens*

This medium-sized frog lives in or near marshes, flooded ditches and small ponds. Like other leopard frog species, it is brown or brown-green, has two skin folds running down each side of the back and dark spots on the back. This species, however, has rounded dark spots compared to elongated dark spots found on southern leopard frogs.

To distinguish it from the plains leopard frog, look for a continuous, wide skin fold down each side of the back northern leopard frogs also have dark spots surrounded by light rings on their back and a dark spot on their short, blunt nose. This species ranges from 2 to 3 inches in head-body length. Like other species of leopard frogs, this species eats a variety of insects and spiders. A female may lay up to 6,000 eggs in a shallow, grassy area of a marsh during late March through April. Their call is a deep, rattling snore with occasional clucking grunts.

#### Missouri Distribution:

Only found in northwestern Missouri



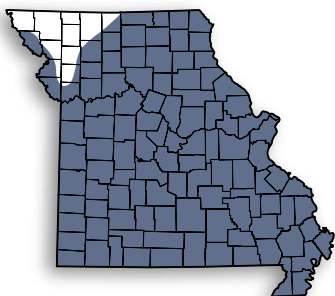
## Southern Leopard Frog

*Rana sphenocephala*

Sometimes called the grass frog, this species can be distinguished from the plains leopard frog by the presence of some green on the back, the more elongated and fewer dark spots on the back, a more elongated snout and a continuous ridge of skin down each side of the back. Southern leopard frogs average from 2 to 3½ inches in head-body length. This common frog breeds in late winter or early spring and uses a variety of habitats: water-filled ditches, ponds, sloughs, lakes, swamps and marshes. Each female may produce from 3,000 to 5,000 eggs. During summer this species is known to venture far from water. The call of the southern leopard frog is a series of abrupt, chucklelike *quacking* sounds.

### Missouri Distribution:

Nearly statewide



## Rare Species



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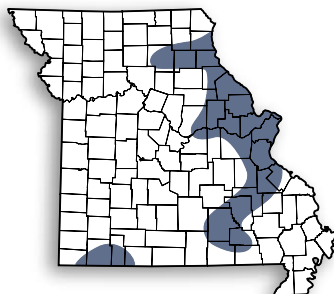
### Wood Frog

*Rana sylvatica*

This is a tan, pinkish-tan or brown frog with a dark, brown mask through the eye and ear. A thin ridge of skin is present along each side of the back. Wood frogs average from  $1\frac{1}{2}$  to  $2\frac{3}{4}$  inches in head-body length. In Missouri, this species lives in cool, forested ravines where small, fishless ponds or pools are available for late winter to early spring breeding. They are known to overwinter on land beneath deep layers of leaves or under moist logs. Wood frogs feed upon a variety of insects and other invertebrates. This northern species is called a “glacial relict” because they were pushed to the southern part of their range due to past glaciations. The voice is a quick series of *waaaduck* sounds.

#### Missouri Distribution:

Scattered locations in eastern, southeastern and southwestern sections of the state with mature forest





# Missouri's Toads and Frogs and their Conservation

**L**andowners who wish to encourage a variety and abundance of toads and frogs can do so by following some simple land-management practices. Most of the species native to Missouri breed in fishless ponds or temporary pools. Landowners may not think these small water holes are valuable, but, in fact, a dozen or more species of amphibians may use them as breeding ponds. Small brush piles placed in the water near the pond edge, as well as near the pond, provide good hiding places for young toads and frogs as they leave the pond. Placing dead tree branches in shallow water will provide places for female frogs to attach their egg masses. Fencing the pond from cattle will protect the water quality and allow the growth of a more diverse plant community, which will provide cover and insects. Insecticides and other pesticides should be kept away from any frog ponds because their eggs and tadpoles are highly sensitive to these chemicals. With a little effort, landowners can ensure that these animals remain a part of our outdoor heritage.

Toads and frogs provide food for a wide variety of animals, and are also eaten by people—frog legs are a delicacy. Their peeps, trills, whistles, grunts and snores add aesthetics to a spring or summer evening. The study of these interesting amphibians can be a rewarding summer-time hobby. Learning to identify Missouri's species by the sounds they make can be an enjoyable spring and summer pastime and is as challenging as birdwatching.

As the famous herpetologist Archie Carr once wrote: "I collect frog songs in my head as some people save stamps in a book." You don't have to be a trained biologist to be able to recognize their various sounds; it just takes practice and lots of patience.

With a little effort, landowners can ensure that these animals remain a part of our outdoor heritage.



*Small, shallow, fishless ponds with a lot of vegetation are important breeding sites for many toads, frogs and salamanders.*

To help you learn more about Missouri's frogs and toads, the Missouri Department of Conservation offers the following products for sale. To make a purchase, go online to *[mdc.natureshop.com](http://mdc.natureshop.com)* or call toll free 1-877-521-8632.

- **Toad and Frogs in Missouri**

*This CD and poster feature 20 frogs and their calls. Price: \$8, plus shipping and sales tax*

- **Amphibians and Reptiles of Missouri  
by Tom R. Johnson**

*This 368-page book written by former state herpetologist Tom R. Johnson is a valuable resource for understanding and identifying some of Missouri's most interesting species.  
Price: \$18, plus shipping and sales tax*



*Serving nature and you*<sup>TM</sup>